UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 10/042,671 | 01/09/2002 | Jyrki Akkanen | 796.411USW1 | 6146 |

32294 7590 05/09/2006

SQUIRE, SANDERS & DEMPSEY L.L.P.
14TH FLOOR
8000 TOWERS CRESCENT
TYSONS CORNER, VA 22182

| EXAMINER | |
|---|---|
| LIOU, JONATHAN | |

| ART UNIT | PAPER NUMBER |
|---|---|
| 2616 | |

DATE MAILED: 05/09/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/042,671 | AKKANEN ET AL. | |
| | Examiner | Art Unit | |
| | Jonathan Liou | 2663 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *10 February 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1 and 4-7* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 and 4-7* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *09 January 2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

## DETAILED ACTION

### *Response to Amendment*

This office action is in response to applicant's paper filed 2/10/2006. Claims 1, 4-7 as amended are currently pending in the application. Applicant has amended claims 1 and 7 and cancelled claims 2 and 3. Claims 1, 4-7 stand rejected.

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1, 4, 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shew et al. (US Pat No. 6,530,032.).

3. As per claim 1, Shew et al. teach a method for forming protected routes (**See col 1, lines 61-67, Shew et al.**), each route comprising two separate paths in a communications network, which network comprises several functional layers on top of one another (**Shew et al. teaches the layers are aligned and hence, it could be on top of one another. See col 2-3, lines 62-7, Shew et al.**), each layer forming demands for protected routes in the layers below (**See col 3, lines 2-7, Shew et al.**), wherein the forming comprises:

routing the layers from bottom to up in a way that the layer under formation is routed into the layer below the layer under formation, starting from the layer above the bottom layer, and finishing when the top layer is routed into the layer below the top

layer, each routing in turn taking into account the protection demands, and taking into account the routing possibilities in the layer below (**Shew et al. teach routing the first layer and defining the second layer routing, and routing into the layers 1, 2 and 3 network into a common topology. The first layer could be the layer above bottom layer and the second layer could be the layer below the top layer. See col 2-3, lines 62-7, col 10, lines 10-18, Shew et al.**)

wherein after each routing of the layer under formation, the routings of the layers below are changed (See col 9, lines 9-11, Shew et al.) In addition, the phrase, "if needed" does not require all of the details that follow it. Thus, examiner also relies on a reasonably broad interpretation of the claim, taking into account "if needed" language present in the claim.

Shew et al. does not specifically teach routing is continued until there is no need to route again. However, it would have been obvious to one who has ordinary skill in the art because finding paths algorithm would continue finding the paths until paths are eventually found. In addition, Shew et al. teach running the routing paths on the alternative while one path is failure (Col 9, lines 15-17.) Thus, it would have been obvious to one who has ordinary skill in the art at the time the invention was made to continue routing until there is no need to route again because it would make sure all possible routing path to be found for alternative.

4. As per claim 4, Shew et al. teach taking of the demands into account comprises taking into account the demands from the layer under formation and from the layers

above the layer under formation (**Shew et al. teaches taking into account of layer 1 formation and layer 2 formation. See col 2, lines 12-23, Shew et al.**)

5. As per claim 6, Shew et al. teaches the possibilities for protected routes, which could be a sublayer as claimed (**See col 10, lines 9-18, Shew et al.**), the forming comprising the steps of:

taking all nodes from the layer below the layer under formation into the sublayer, taking reliable and protected transmission lines from the layer below the layer under formation into the sublayer (**See col 10, lines 9-18, Shew et al.**)

forming a new transmission line between each pair of the nodes where can be found two separate routes in the layer below the layer under formation, using the sublayer when routing the layer under formation in a way that the sublayer represents the layer below the layer under formation (**See col 9, lines 5-32 and col 10, lines 9-18, Shew et al.**)

6. Claims 5, 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shew et al. (US Pat No. 6,530,032.), and further in view of Narvaez et al. (US Pat No. 6,704,320.)

7. As per claim 5, Shew et al. teach the routing under formation of finding the two shortest routes from the all route candidates, each route formed by transmission lines one after the other, and fixing one of the found routes (Shew et al. teach finding the shortest paths, and a backup router sequence which could be fix. See col 6, lines 14-18, and col 9, lines 4-18, Shew et al.)

Shew et al. does not teach providing each transmission line having a weight describing the length of the transmission line and calculating new weights in order to find the a new shortest route, which is not fixed. Nevertheless, Narvaez et al. teach the weight of a link to describe the length of the path and changing in the weight in a negative or positive distance change (See col 2, lines 47-67, Narvaez et al.), Narvaez et al. teach the link could be identified as fails, recovers or changes its routing weights, and Narvaez et al. teach finding a new shortest route for the route which is not fixed according to the new weight calculation (See col 12, lines 47-60, Narvaez et al.) In addition, OSPF algorithm has iteration process to find the shortest route. Shew et al. teaches the system to find the shortest path by Open Shortest Path First (OSPF) topology (See col 4, lines 53-55, Shew et al.), and in general, OSPF follows the algorithm, such as Dijkstra's algorithm. Narvaez et al. teach using the weight function in OSPF topology for find the shortest path tree (SPT) (See col 1, lines 15-34, Narvaez et al.) Therefore, it would have been obvious for one who have ordinary skill in the art at the time the invention was made to use the weighting function to for the transmission link and recalculating the weighting factor to find the shortest path routing because it would be more efficient to find the shortest path by providing the weight function as taught by Narvaez et al. to the structure of Shew et al.

8. As per claim 7, Shew et al. teach failed link recovers, and of course when the link is identified failed, which is separated from the all other routing path. In addition, other routing path could be fix in the Backup routing sequence (See col 9-10, lines 5-67,

Shew et al.). The remainders of claim 7 are similar to claim 5; thus, the same basis and rationale as applied to claim rejection 5 are applied.

***Conclusion***

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jonathan Liou whose telephone number is 571-272-8136. The examiner can normally be reached on 8:00AM - 5:00PM Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Ngo can be reached on 571-272-3139. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jonathan Liou

4/24/2006

RICKY Q. NGO
SUPERVISORY PATENT EXAMINER